

## Refine Search

Your wildcard search against 10000 terms has yielded the results below.

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The probable cause is use of unlimited truncation. Revise your search strategy to use limited truncation.

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L6

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Recall Text

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### Search History

DATE: Wednesday, October 25, 2006    [Purge Queries](#)    [Printable Copy](#)    [Create Case](#)

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DB=USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR

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L6: Entry 7 of 12

File: USPT

May 7, 2002

DOCUMENT-IDENTIFIER: US 6385148 B2

TITLE: Information recording medium, information recording method, information recording apparatus and information reproducing apparatus

Brief Summary Text (44):

According to another aspect of this invention, an information recording method for recording information on an information recording medium is provided. The information recording medium includes: a volume space in which user data is recorded; a spare area including a replacement area which may be used in place of a defective area included in the volume space; and a defect management information area in which defect management information for managing the defective area is recorded. The method includes the steps of: detecting the defective area; and recording status information indicating whether the defective area is replaced by the replacement area in the defect management information area.

Brief Summary Text (46):

In one embodiment of the invention, the spare area is an expandable area. The method further includes the step of detecting that the spare area temporarily runs out of available replacement areas. When there are no available spare area in the replacement area temporarily, the status information indicating that the defective area is not replaced by the replacement area is written in the defect management information area.

Brief Summary Text (50):

According to still another aspect of this invention, an information recording apparatus for recording information on an information recording medium is provided. The information recording medium includes: a volume space in which user data is recorded; a spare area including a replacement area which may be used in place of a defective area included in the volume space; and a defect management information area in which defect management information for managing the defective area is recorded. The apparatus includes: a detection section for detecting the defective area; and a recording section for recording status information indicating whether the defective area is replaced by the replacement area in the defect management information area.

Brief Summary Text (52):

In one embodiment of the invention, the spare area is an expandable area. The apparatus further includes a further detection section for detecting that the spare area temporarily runs out of available replacement areas. When there are no available spare area in the replacement area temporarily, the recording section writes in the defect management information area the status information indicating that the defective area is not replaced by the replacement area.

Detailed Description Text (27):

Thus, by storing in the defect management information area, status information which indicates whether a defective area (a defective sector or a defective block) is replaced by a replacement area (a replacement sector or a replacement block), it is possible to manage the status where a defective area has been detected but is not replaced by a replacement area.

Detailed Description Text (58):

As described above, when a defective area is detected while recording data which requires real time processing (e.g., AV data), the data is not recorded in the

defective area (i.e., the defective area is skipped). The location of the defective area is written in the defect management information area 4b of the disk 1. Moreover, status information indicating that the defective area is not replaced by a replacement area is also written in the defect management information area 4b of the disk 1. When it is requested to record data which does not require real time processing (e.g., non-AV data) in the defective area, the defective area is replaced by a replacement area without performing a read modified write operation. The location of the replacement area is written in the defect management information area 4b of the disk 1.

Detailed Description Text (61):

Where a spare area is expandable, the spare area may temporarily run out of available replacement areas. When no replacement area can be allocated to a detected defective area because the spare area is temporarily out of available replacement areas, the location of the defective area is written in the defect management information area 4b of the disk 1. Moreover, status information indicating that the defective area is not replaced by a replacement area (no replacement area has been allocated thereto) is written in the defect management information area 4b of the disk 1. After the spare area is expanded and a replacement area is made available, the replacement area is allocated to the defective area and the defective area is replaced by the replacement area. The location of the replacement area is written in the defect management information area 4b of the disk 1.

Detailed Description Text (181):

According to the information recording medium of the present invention, defect management information including status information which indicates whether a defective area is replaced by a replacement area is recorded in the defect management information area. With this status information, it is possible to manage the status where a defective area has been detected but is not replaced by a replacement area.

Detailed Description Text (182):

When a defective area is detected while recording data which requires real time processing (e.g., AV data) on the information recording medium, the defective area is skipped. The location of the defective area and status information indicating that the defective area is not replaced by a replacement area are written in the defect management information area. When it is requested to record data which does not require real time processing (e.g., non-AV data) in the defective area, a replacement area is allocated to the defective area without performing a read modified write operation, thereby successfully performing the requested recording operation. Moreover, a replacement area is not allocated to the defective area until it is actually requested to record data in the defective area. This provides an advantage in that no replacement area is wasted.

Detailed Description Text (183):

Where a spare area is expandable, the spare area may temporarily run out of available replacement areas. When no replacement area can be allocated to a detected defective area because the spare area is temporarily out of available replacement areas, the location of the defective area and status information indicating that the defective area is not replaced by a replacement area are written in the defect management information area. After the spare area is expanded and a replacement area is made available, the replacement area is allocated to the defective area. The location of the replacement area is written in the defect management information area.

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L6: Entry 4 of 12

File: USPT

Feb 10, 2004

DOCUMENT-IDENTIFIER: US 6691265 B2

TITLE: Method for creating defect management information in an recording medium, and apparatus and medium based on said method

## CLAIMS:

9. A method for creating and writing defect management information of an information recording medium, comprising the steps of: detecting the presence of a defective area in the information recording medium; determining whether to replace data in the detected defective area into a replacement area; and creating and writing information signifying whether or not a replacement of the detected defective area is performed.

11. An apparatus for creating and writing defect management information of an information recording medium, comprising: means for detecting the presence of a defective area in the information recording medium; means for determining whether to move data in the detected defective area into a replacement area and creating and writing information signifying whether or not a replacement of the detected defective area is made.

18. A method for creating and writing defect management information of an information recording medium, comprising the steps of: detecting the presence of a defective area in the information recording medium; determining whether to move data in the detected defective area into a replacement area for real time data; and creating and writing an information signifying whether or not a replacement of the detected defective area is made.

19. A method for creating and writing defect management information of an information recording medium, comprising the steps of: detecting the presence of a defective area in the information recording medium; determining whether to move data in the detected defective area into a replacement area; detecting type of data stored in the defective area; moving the data in the detected defective area into the replacement area if the data is non-real-time data; and recording information signifying whether or not a replacement of the detected defective area is made.

25. A method for recording defect management information for an information recording medium, the method comprising: detecting type of data and presence of a defective area in an information recording medium; preventing the data in the detected defective area from being stored in a replacement area, if the data is real-time-data; storing the data in the replacement area, if the data is non-real-time data; and recording an information signifying whether or not the data in the detected defective area is stored in the replacement area based on a type of data.

27. A method for creating and writing defect management information of an information recording medium, the method comprising: detecting the presence of a defective area in an information recording medium; controlling data in the detected defective area such that the data is not moved into a replacement area for real time data; and writing information signifying that a replacement for the data in the defective area is not made.

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L6: Entry 6 of 12

File: USPT

May 13, 2003

DOCUMENT-IDENTIFIER: US 6564345 B1

TITLE: Method for creating defect management information in an recording medium, and apparatus and medium based on said method

## CLAIMS:

1. A method for creating and writing defect management information of an information recording medium, comprising the steps of: (a) detecting the presence of a defective area in an information recording medium based on data reproduced from the information recording medium; (b) determining whether or not to move the data in the detected defective area into a replacement area once the presence of the defective area is detected in said (a); and (c) creating and writing information signifying whether or not a replacement of the detected defective area is made.

8. A method for creating and writing defect management information of an information recording medium, comprising the steps of: (a) detecting the presence of a defective area in an information recording medium based on data reproduced from the information recording medium; and (b) determining whether or not to move the data recorded in the detected defective area into a replacement area based on type of the data.

14. An apparatus for creating and writing defect management information of an information recording medium, comprising: means for detecting the presence of a defective area in an information recording medium based on data reproduced from the information recording medium; means for determining whether or not to move the data in the detected defective area into a replacement area once said detecting means detects the presence of the defective area; and means for creating and writing information signifying whether or not a replacement of the detected defective area is made.

21. An apparatus creating and writing defect management information of an information recording medium, comprising: means for detecting the presence of a defective area in an information recording medium based on data reproduced from the information recording medium; and means for determining whether or not to move the data recorded in the detected defective area into a replacement area based on type of the data.

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L6: Entry 11 of 12

File: USPT

Dec 12, 2000

DOCUMENT-IDENTIFIER: US 6160778 A

TITLE: Information recording medium, information recording method, information recording apparatus and information reproducing apparatus

Brief Summary Text (44):

According to another aspect of this invention, an information recording method for recording information on an information recording medium is provided. The information recording medium includes: a volume space in which user data is recorded; a spare area including a replacement area which may be used in place of a defective area included in the volume space; and a defect management information area in which defect management information for managing the defective area is recorded. The method includes the steps of: detecting the defective area; and recording status information indicating whether the defective area is replaced by the replacement area in the defect management information area.

Brief Summary Text (46):

In one embodiment of the invention, the spare area is an expandable area. The method further includes the step of detecting that the spare area temporarily runs out of available replacement areas. When there are no available spare area in the replacement area temporarily, the status information indicating that the defective area is not replaced by the replacement area is written in the defect management information area.

Brief Summary Text (50):

According to still another aspect of this invention, an information recording apparatus for recording information on an information recording medium is provided. The information recording medium includes: a volume space in which user data is recorded; a spare area including a replacement area which may be used in place of a defective area included in the volume space; and a defect management information area in which defect management information for managing the defective area is recorded. The apparatus includes: a detection section for detecting the defective area; and a recording section for recording status information indicating whether the defective area is replaced by the replacement area in the defect management information area.

Brief Summary Text (52):

In one embodiment of the invention, the spare area is an expandable area. The apparatus further includes a further detection section for detecting that the spare area temporarily runs out of available replacement areas. When there are no available spare area in the replacement area temporarily, the recording section writes in the defect management information area the status information indicating that the defective area is not replaced by the replacement area.

Detailed Description Text (27):

Thus, by storing in the defect management information area, status information which indicates whether a defective area (a defective sector or a defective block) is replaced by a replacement area (a replacement sector or a replacement block), it is possible to manage the status where a defective area has been detected but is not replaced by a replacement area.

Detailed Description Text (58):

As described above, when a defective area is detected while recording data which requires real time processing (e.g., AV data). the data is not recorded in the

defective area (i.e., the defective area is skipped). The location of the defective area is written in the defect management information area 4b of the disk 1. Moreover, status information indicating that the defective area is not replaced by a replacement area is also written in the defect management information area 4b of the disk 1. When it is requested to record data which does not require real time processing (e.g., non-AV data) in the defective area, the defective area is replaced by a replacement area without performing a read modified write operation. The location of the replacement area is written in the defect management information area 4b of the disk 1.

Detailed Description Text (61):

Where a spare area is expandable, the spare area may temporarily run out of available replacement areas. When no replacement area can be allocated to a detected defective area because the spare area is temporarily out of available replacement areas, the location of the defective area is written in the defect management information area 4b of the disk 1. Moreover, status information indicating that the defective area is not replaced by a replacement area (no replacement area has been allocated thereto) is written in the defect management information area 4b of the disk 1. After the spare area is expanded and a replacement area is made available, the replacement area is allocated to the defective area and the defective area is replaced by the replacement area. The location of the replacement area is written in the defect management information area 4b of the disk 1.

Detailed Description Text (181):

According to the information recording medium of the present invention, defect management information including status information which indicates whether a defective area is replaced by a replacement area is recorded in the defect management information area. With this status information, it is possible to manage the status where a defective area has been detected but is not replaced by a replacement area.

Detailed Description Text (182):

When a defective area is detected while recording data which requires real time processing (e.g., AV data) on the information recording medium, the defective area is skipped. The location of the defective area and status information indicating that the defective area is not replaced by a replacement area are written in the defect management information area. When it is requested to record data which does not require real time processing (e.g., non-AV data) in the defective area, a replacement area is allocated to the defective area without performing a read modified write operation, thereby successfully performing the requested recording operation. Moreover, a replacement area is not allocated to the defective area until it is actually requested to record data in the defective area. This provides an advantage in that no replacement area is wasted.

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L6: Entry 8 of 12

File: USPT

Oct 16, 2001

DOCUMENT-IDENTIFIER: US 6304534 B1

TITLE: Information recording medium, information recording method, information recording apparatus and information reproducing apparatus

Brief Summary Text (44):

According to another aspect of this invention, an information recording method for recording information on an information recording medium is provided. The information recording medium includes: a volume space in which user data is recorded; a spare area including a replacement area which may be used in place of a defective area included in the volume space; and a defect management information area in which defect management information for managing the defective area is recorded. The method includes the steps of: detecting the defective area; and recording status information indicating whether the defective area is replaced by the replacement area in the defect management information area.

Brief Summary Text (46):

In one embodiment of the invention, the spare area is an expandable area. The method further includes the step of detecting that the spare area temporarily runs out of available replacement areas. When there are no available spare area in the replacement area temporarily, the status information indicating that the defective area is not replaced by the replacement area is written in the defect management information area.

Brief Summary Text (50):

According to still another aspect of this invention, an information recording apparatus for recording information on an information recording medium is provided. The information recording medium includes: a volume space in which user data is recorded; a spare area including a replacement area which may be used in place of a defective area included in the volume space; and a defect management information area in which defect management information for managing the defective area is recorded. The apparatus includes: a detection section for detecting the defective area; and a recording section for recording status information indicating whether the defective area is replaced by the replacement area in the defect management information area.

Brief Summary Text (52):

In one embodiment of the invention, the spare area is an expandable area. The apparatus further includes a further detection section for detecting that the spare area temporarily runs out of available replacement areas. When there are no available spare area in the replacement area temporarily, the recording section writes in the defect management information area the status information indicating that the defective area is not replaced by the replacement area.

Detailed Description Text (27):

Thus, by storing in the defect management information area, status information which indicates whether a defective area (a defective sector or a defective block) is replaced by a replacement area (a replacement sector or a replacement block), it is possible to manage the status where a defective area has been detected but is not replaced by a replacement area.

Detailed Description Text (58):

As described above, when a defective area is detected while recording data which requires real time processing (e.g., AV data), the data is not recorded in the



defective area (i.e., the defective area is skipped). The location of the defective area is written in the defect management information area 4b of the disk 1. Moreover, status information indicating that the defective area is not replaced by a replacement area is also written in the defect management information area 4b of the disk 1. When it is requested to record data which does not require real time processing (e.g., non-AV data) in the defective area, the defective area is replaced by a replacement area without performing a read modified write operation. The location of the replacement area is written in the defect management information area 4b of the disk 1.

Detailed Description Text (61):

Where a spare area is expandable, the spare area may temporarily run out of available replacement areas. When no replacement area can be allocated to a detected defective area because the spare area is temporarily out of available replacement areas, the location of the defective area is written in the defect management information area 4b of the disk 1. Moreover, status information indicating that the defective area is not replaced by a replacement area (no replacement area has been allocated thereto) is written in the defect management information area 4b of the disk 1. After the spare area is expanded and a replacement area is made available, the replacement area is allocated to the defective area and the defective area is replaced by the replacement area. The location of the replacement area is written in the defect management information area 4b of the disk 1.

Detailed Description Text (181):

According to the information recording medium of the present invention, defect management information including status information which indicates whether a defective area is replaced by a replacement area is recorded in the defect management information area. With this status information, it is possible to manage the status where a defective area has been detected but is not replaced by a replacement area.

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L6: Entry 8 of 12

File: USPT

Oct 16, 2001

DOCUMENT-IDENTIFIER: US 6304534 B1

TITLE: Information recording medium, information recording method, information recording apparatus and information reproducing apparatus

Brief Summary Text (44):

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